

REMARKS

This application has been reviewed in light of the Office Action dated August 25, 2006. In view of the foregoing amendments and the following remarks, favorable reconsideration and withdrawal of the rejections set forth in the Office Action are respectfully requested.

Claims 1, 2 and 6-11 are pending. Claim 5 has been canceled, without prejudice or disclaimer of subject matter. Claims 1 and 11 have been amended. Support for the claim changes can be found in the original disclosure (e.g., Fig. 7; pages 27 and 28 of the specification), and therefore no new matter has been added. Claims 1 and 11 are in independent form.

Claims 1, 2, 6-8 and 11 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Japanese Patent Application Laid-Open No. 9-226185 (*Takayanagi*) in view of U.S. Patent No. 6,481,905 (*Day et al.*).

Claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over *Takayanagi* in view of *Day et al.*, and further in view of U.S. Patent No. 5,690,437 (*Yanagisawa et al.*).

Claims 9 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over *Takayanagi* in view of *Day et al.*, and further in view of U.S. Patent Application Publication No. 2003/0067507 (*Anzai*).

Without conceding the propriety of the rejections, the independent claims have been amended. Applicant submits that the independent claims are allowable over the cited art for at least the following reasons.

Independent Claim 1 recites, *inter alia*, counting means for counting at least a part of print data, stored in a buffer, which causes a printhead to perform a printing operation during acceleration of a carriage, comparison means for comparing a counted value, counted by the counting means, with a predetermined threshold value, control means for controlling to change a number of printing elements of the printhead to be used in a printing operation for one scan of the carriage, based on a comparison result of the comparison means, a power source for supplying electric power to a printing apparatus, and determination means for determining whether or not the power source is an AC power source or a battery power source. In a case in which it is determined by the determination means that the power source is a battery power source, controlling is performed by the control means, and in a case in which it is determined by the determination means that the power source is an AC power source, the counting by the counting means, the comparing by the comparison means, and the controlling by the control means are skipped.

Independent method Claim 11 recites features similar to those of Claim 1.

By virtue of the claimed features, an apparatus according to the claimed invention can skip unnecessary print control in a case where the power source is an AC power source since the capacity of the power source is sufficient in that case. As a result, the processing load carried by an MPU in the apparatus is reduced.

Takayanagi relates to a recording method and recording device therefor, including, for example, a technique for dividing an area scanned by a printhead into plural subareas, and counting a number of printed dots corresponding to each subarea. The Office Action (page 2) cites paragraphs [0013]-[0014] of the computer translation of *Takayanagi* as teaching control means for controlling to change a number of printing

elements of the printhead to be used in a printing operation for one scan of the carriage, based on a comparison result of the comparison means. The cited paragraphs read as follows:

[0013] [Embodiment of the Invention] This invention is equipped with two or more record elements by the above configuration, and the both-way scan of the recordable recording head is carried out by energizing to said two or more record elements. In case it records on a record medium, input record data from the exterior and it stores in a storage by making into one unit the record data corresponding to the record length recorded by one scan of a recording head. The record data for the one unit are divided into two or more partitions. For every divided partition of the number of pixels corresponding to the data made to generate record actuation -- counting -- carrying out -- the counting -- according to a result, it determines by how many times scan of a recording head the record data of one unit are recorded, and it operates so that it may control to record by scanning a recording head based on the decision result.

[0014] The above control is still more specifically related with two or more of the divided partitions of each here. Average the number of pixels by which counting was carried out every two adjoining partitions, and the maximum number of pixels is computed from the equalized number of pixels. The maximum and 1st threshold are compared and you may make it choose whether the record data of one unit are recorded by one scan of a recording head, or two scans according to the comparison result.

As indicated above, *Takayanagi* is seen to teach control of how many scans, i.e., whether record data of one unit are recorded by one scan of a recording head or by two scans, according to a comparison result. However, nothing in *Takayanagi* is seen to teach or suggest controlling to change a number of printing elements of the printhead to be used in a printing operation for one scan of the carriage, based on a comparison result of the comparison means.

Nothing in *Day et al.*, *Yanagisawa et al.* or *Anzai* is understood to remedy this deficiency of *Takayanagi* with respect to Claim 1.

Yanagisawa et al. relates to a method and apparatus for controlling thermal head drive. The Office Action (page 4) cites column 7, lines 30-49 (which describe Fig. 7) as teaching determining means for determining whether or not the power source is an AC power source or a battery power source, and wherein in a case where it is determined by the determining means that the power source is a battery power source, controlling is performed by the control means. The cited portion of *Yanagisawa et al.* teaches that during initialization, the type of power supply is determined and, if the power supply is a battery, it is determined whether the battery is installed with the correct polarity. If the polarity is found to be incorrect, the power is shut off; if the polarity is correct, the initialization continues. If the power supply is from an AC adapter, the polarity determining step is skipped over.

In contrast, according to Claim 1, if it is determined that the power source is a battery power source, print control is performed (controlling to change a number of printing elements of the printhead to be used in a printing operation for one scan of the carriage, based on a comparison result of the comparison means). If it is determined that the power source is an AC power source, the counting by the counting means, the comparing by the comparison means, and the controlling by the control means are skipped.

Nothing in *Yanagisawa et al.* is understood to teach or suggest determination means for determining whether or not a power source is an AC power source or a battery power source, wherein, in a case in which it is determined by the determination means that the power source is a battery power source, controlling is performed by control means, and in a case in which it is determined by the determination means that the power source is an

AC power source, counting by counting means, comparing by comparison means, and the controlling by the control means are skipped.

Nothing in *Takayanagi*, *Day et al.* or *Anzai* is understood to remedy this deficiency of *Yanagisawa et al.* with respect to Claim 1.

Since none of *Takayanagi*, *Day et al.*, *Yanagisawa et al.* and *Anzai*, whether taken singly or in combination (even assuming, for the sake of argument, that such combination were permissible), contains all of the elements of independent Claim 1 or 11, those claims are believed allowable over those documents.

Further, the cited prior art, whether taken singly or in combination (even assuming, for the sake of argument, that such combination were permissible), is not understood to achieve such an advantageous result as that achieved by the claimed invention, namely, a reduction in the processing load of an MPU in a printing apparatus during print control.

A review of the other art of record has failed to reveal anything which, in Applicant's opinion, would remedy the deficiencies of the art discussed above, as references against the independent claims herein. These claims are therefore believed patentable over the art of record.

The other claims in this application are each dependent from independent Claim 1 and are therefore believed patentable for the same reasons. Since each dependent claim is also deemed to define an additional aspect of the invention, however, the individual reconsideration of the patentability of each on its own merits is respectfully requested.

In view of the foregoing amendments and remarks, Applicant respectfully requests favorable reconsideration and early passage to issue of the present application.

STATEMENT OF SUBSTANCE OF INTERVIEW


Applicant wishes to thank the Examiner for the courtesies extended to Applicant's undersigned representative during the telephone interview conducted on November 16, 2006 and reported by the Examiner in the Interview Summary, a copy of which was forwarded to Applicant's undersigned representative on November 16, 2006.

In the interview, Applicant's undersigned representative argued, along the lines of the arguments set forth in the instant Amendment, that independent Claims 1 and 11 are patentable over the art cited in the Office Action dated August 25, 2006, specifically, Japanese Patent Application Laid-Open No. 9-226185 (*Takayanagi*) and U.S. Patent No. 5,690,437 (*Yanagisawa et al.*). The Examiner stated that the independent claims as amended herein would overcome that art.

The Examiner indicated that, upon formal presentation of the claim amendments made herein, she would perform a further search of the prior art.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'D. Pinsky', with a long horizontal flourish extending to the right.

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